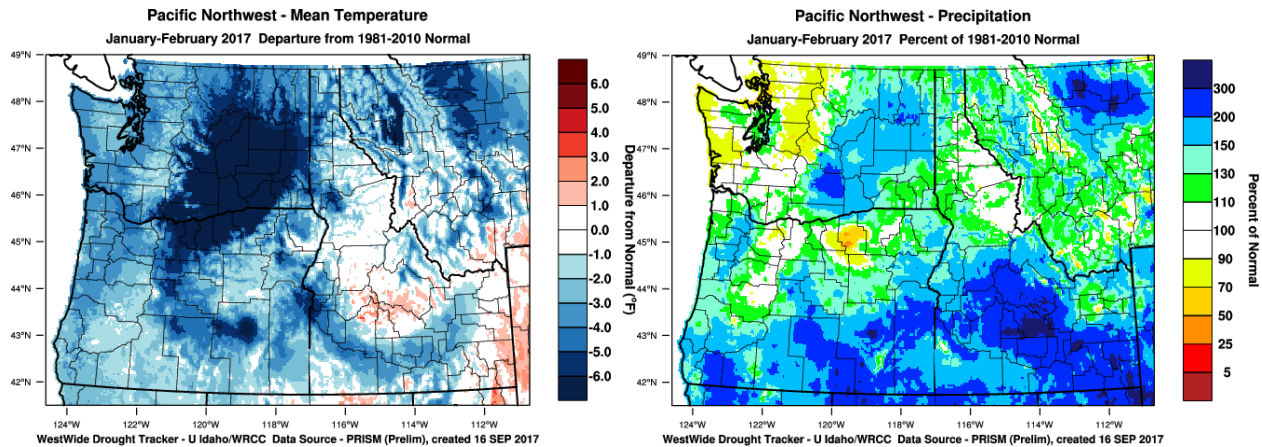


2017 Annual Summary

2017 started off on a cold note for January and February with temperatures well below normal. In addition precipitation was above normal which resulted in a very wintry period for the Inland Northwest with several rounds of snow and freezing rain. See maps below to see how Jan-Feb 2017 compared to normal.



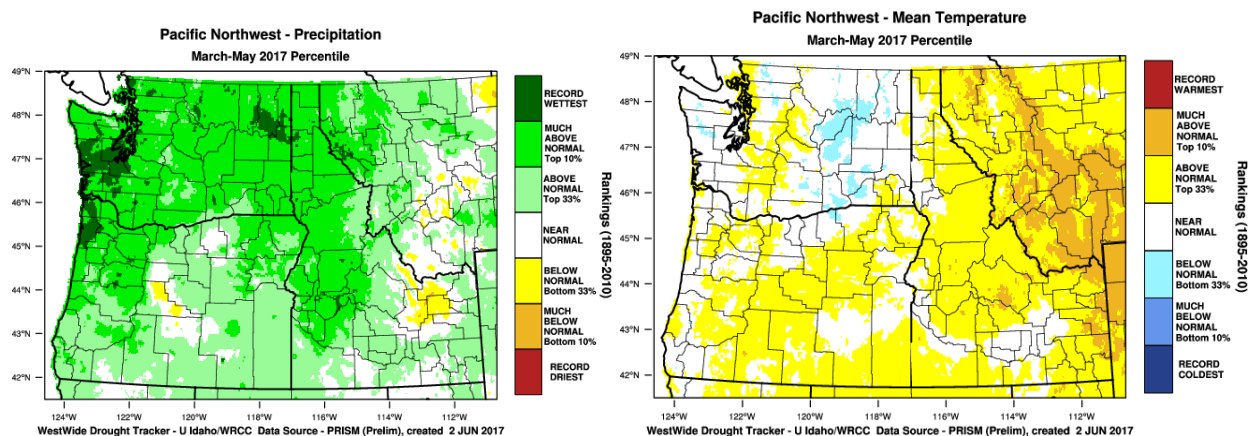
January was very winter like with the first half of the month featuring periods of very cold temperatures as arctic air again invaded the region from the 2nd through the 6th and again from the 12th through the 16th. Deer Park dropped to -19F on the 5th with -13F in Newport. In between these periods of very cold generally dry conditions, Pacific moisture entered the picture bringing snow on New Years Day...and again from the 7th through the 9th. The New Years Day snow brought variable totals as cold...unstable air moved overhead. Mission Ridge south of Wenatchee was especially hard hit with 39". The Loon Lake...Elk...Sacheen Lake...and Diamond Lake areas of NE Washington were a second winner with 9-12". After more snow fell from the 7th through the 9th, strong north winds down the Okanogan Valley into the Moses Lake area created significant drifting of snow resulting in the closure of Highway 2 between Coulee City and Waterville. As the Inland NW transitioned out of the deep freeze...a significant shot of precipitation entered the region from the southwest on the 17th and 18th. This brought a wide variety of weather including snow...freezing rain...and sleet. The Columbia Basin was hardest hit where an ice storm brought freezing rain accumulations up to 0.75". Kendrick and Julietta were also hard hit with up to 0.50". The Spokane area saw a wintry mix while mostly snow occurred in the northern valleys and Cascades. This storm resulted in numerous slide offs and accidents, including a closure of Interstate 90 in the Columbia Basin near Vantage, and over 4th of July Pass in the Idaho Panhandle. Quieter weather occurred for the remainder of the month. After a brief warm up colder air returned for the end of the month with even light snow in some areas. A localized band of heavy snow hit St. John and Colfax with 4-6".

February remained active with much wetter than normal conditions with periods of snow, rain, and freezing rain. Spokane had its 2nd wettest February with 4.39" of precipitation. Bonners

Ferry had its 2nd snowiest February with 44.3". The first active period occurred from the 3rd through the 6th as cold air from Canada once again collided with moist air from the Pacific. Spokane recorded its heaviest snow of the season on the 3rd and 4th with 8.6". Bonners Ferry stayed on the cold side of this storm with an impressive 30". The next storm on the 8th resulted in warm moist air overriding cold air with snow changing to freezing rain with 0.25" of ice at Spokane with 0.50" in Coeur d'Alene and Springdale. Areas further north got snow with 6" in Northport and another 9" in Bonners Ferry. In the Cascades all of this precipitation fell as snow. From the 3rd through the 9th snow amounts include 56" Stehekin, 25" Plain and Mazama, 12-15" Wenatchee, and 9" Okanogan. Elsewhere warmer weather on the 9th brought rain. However the prolonged cold winter and frozen rivers resulted in ice jams on the St. Joe River with water over roads in Calder. Widespread light freezing rain occurred during the morning of the 15th from the Cascades to the Idaho Panhandle creating very icy roadways. Then warmer air resulted in several rounds of rain through the 20th. A combination of rain/snow melt led to several road washouts in SE Spokane county. Hangman/Latah Creek reached minor flood stage early on the 17th. The pattern turned colder to finish out the month. A small system hit the Lewiston area early on the 27th with 4" of snow. The last few days of the month bands of heavy snow showers set up with 10" in Naples and 12-15" in Saint Maries

March started where the winter left off with more lower elevation snow. On the 4th a couple bands of snow set up over SE Washington and the Lewiston area with 10" in Asotin, 6" Moscow and Nez Perce, and 4" in Lewiston. What was really remarkable about this event is how temperatures fell through the day in Lewiston...dropping from 50 degrees at midnight to 32-33 degrees during the afternoon and evening. It was NE Washington's turn with the white stuff on the 7th with 6" in Deer Park and 2-4" in the Spokane area. In the Cascades, Stehekin came in with 10". After that warmer...wet weather struck which after a record wet fall/winter season for many led to several reports of small stream and field flooding as well as mudslides. In Idaho SR 3 was closed between Julietta and Kendrick due to a mudslide, while SR 5 near Round Lake was severely damaged and considered a total loss. Highway 95 near Bonners Ferry was closed twice due to mudslides. Another large slide near Sandpoint sent mud into a home. SR 31 near Metaline closed for several days. Water went over several roads including Highway 395 near Colville. The Spokane River reached its 4th highest flow on record with significant flooding on Lake Coeur d'Alene as well. The St. Joe River at Saint Maries reached major flood stage. Paradise Creek in Moscow reached moderate flood stage on the 9th and 10th. The community of Sprague experienced significant flooding of parks and structures with 40 National Guard Troops assisting with the flooding. Flooding was also reported on Davis, Williams, and Neuman Lakes.

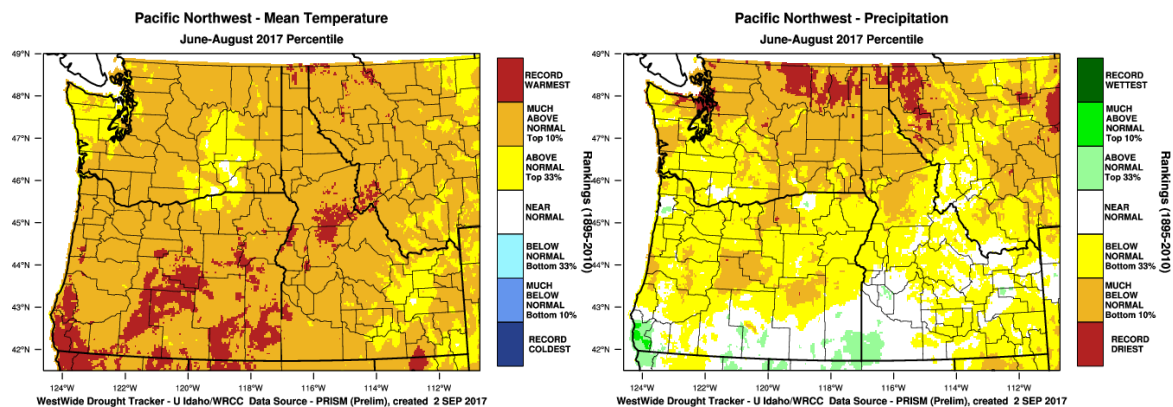
After a cold and wet winter, some may have wondered what spring would bring. As it turned out, very wet weather persisted especially March and April with the spring finishing in the top 10% wettest on record for many locations as the maps below show. Temperatures were not as cold though, and finished about normal for most areas.



The wet weather continued into **April**. The 5th through the 13th was especially wet and active with North Central Washington experiencing the brunt of the flooding this time. The Okanogan and Methow Valleys picked up 2-2.5 inches of rain with Wenatchee around 1.5 inches. The most significant land slides include Highway 20 near Loup Loup Pass which closed for the remainder of April and May and was still closed at the time of this writing. The Okanogan Highlands were also very hard hit with SR 21 south of Republic and Gold Creek Road closed. Significant flooding occurred on the Sanpoil River near Keller with a house part way into the river. A significant slide also closed Porcupine Bay Road in Lincoln County. Besides the rain, a couple noteworthy events, including a strong cold front early on the 7th which brought wind gusts to 56 mph in Lewiston and 46 MPH in Pullman. Strong thunderstorms also occurred on the 18th with half inch hail in Colbert and near Rockford, with a 41 mph wind gust at the Spokane Airport. On the 19th, scattered thunderstorms developed over the Okanogan and Methow Valleys, Waterville Plateau, and Okanogan Highlands producing brief heavy rain and wind gusts of 30-40 mph.

May brought typical weather to the Inland NW with several large swings in temperatures. A common theme was high temperatures warming into the 80s and even a few 90s, followed by a cold front with showers and thunderstorms and temperatures back down into the 50s...before warming back up again. On the 5th...a severe thunderstorm went through the Blue Mountains with a wind gust of 66 mph at Alder Ridge. This same storm also brought dime size hail to Lapwai. On the 11th, a severe thunderstorm went through Nespelern with 1" hail. On the 16th, a cold unstable trough brought thunderstorms with heavy rain, hail, and even snow pellets to the Waterville Plateau and Coulee City creating locally slick roads. On the 24th, a strong dry cold front brought windy conditions across the region with 35-45 mph wind gusts. Lastly on the 30th, strong thunderstorms tracked across the Moses Lake area northward towards Omak with a 55 mph wind gust in Ephrata and significant amounts of blowing dust.

After such a wet October through May, the weather made a dramatic turn over the summer with hot and dry conditions. There were very little noteworthy weather events of the summer, with the warm and dry conditions the big story. Thankfully, the dry conditions meant not much lightning, although when lightning did occur fires resulted. Through the end of August, Spokane Airport had recorded 64 consecutive days without measurable rain. The record streak is 73 days set back in 1917. Here are some maps and a table showing how the summer ranked precipitation and temperature wise.



Site	Jun-Aug 2017 Precipitation	Record lowest (year)	Jun-Aug 2017 Average temp	Record warmest (year)
Spokane	0.71" (5 th driest)	0.44 (2015)	71.2 (3 rd warmest)	72.7 (2015)
Lewiston	0.65" (6 th driest)	0.01 (1883)	74.8 (7 th warmest)	76.8 (2015)
Wenatchee Waterplant	0.13" (6 th driest)	0.04 (1970)	74.5 (6 th warmest)	76.9 (2015)
Ritzville	0.32 (8 th driest)	0.11 (2015)	69.2 (11 th warmest)	72.6 (1961)
Republic	0.54 (3 rd driest)	0.24 (1914)	64.9 (5 th warmest)	67.2 (2015)

The most active weather of the summer occurred in **June**. A strong cold front brought showers and a few thunderstorms on the 8th. Temperatures cooled from the mid 90s on the 7th to the mid 70s on the 8th. A thunderstorm developed behind the front over Banks Lake producing strong winds with Ephrata gusting to 47 mph. Another weather system on the 26th brought a line of strong thunderstorms which tracked from the Spokane and Deer Park areas east to Sandpoint producing frequent lightning, localized heavy rain, and wind gusts up to 45 mph. Pullman and Lewiston also had thunderstorms with wind gusts to around 40 mph. Another area of thunderstorms tracked from Mission Ridge to Palisades starting several fires which became large on the 27th and 28th due to gusty winds, warm temperatures, and low relative humidity. More thunderstorms on the 28th over North Idaho produced brief heavy rain and pea size hail in Coeur d'Alene, Priest Lake, and Bonners Ferry.

July brought hot and dry conditions. There were three days with thunderstorms beginning on the 10th as thunderstorms tracked near the Canadian border from Lauier to Northport producing

brief heavy rain. More significant lightning occurred on the 15th with most storms dry. This resulted in several new fires with the most significant one the Craig Mountain Complex south of Lewiston which burned 50,395 acres. More dry lightning occurred over NE Washington and North Idaho on the 20th.

August brought warm, smoky, and hazy conditions especially for the first 11 days of the month. Persistent north to northwest flow brought an abundance of smoke into the region from British Columbia. A strong cold front brought some relief for the middle of the month with light showers on the 13th and 14th and high temperatures in many areas only reaching the mid to upper 70s. A dry cold front late on the 16th contributed to rapid fire spread of the Monument Hill Fire near Quincy with several structures lost. Hot, dry, smoky conditions returned for the end of the month with Lewiston reaching 105 degrees on the 29th.

September started where August left off with very warm and dry conditions with high temperatures in the 90s on the 2nd and 3rd. This resulted in a continuation of numerous active wildfires across Washington, Oregon, Montana, and southern British Columbia. The Montana fires were especially active and thus when winds shifted out of the northeast on the 4th extensive smoke was brought into the region. Widespread visibility of one to three miles was observed from the 4th through the 7th. Additional wind shifts resulted in varying amounts of smoke through the 15th. The pattern changed on the 17th, finally bringing an end of the smoke. Rain showers moved in late in the evening, ending Spokane Airport dry streak at 80 days which was a record. The 18th through the 21st was much cooler and wet with some places not even making it out of the upper 40s for highs. Isolated thunderstorms occurred to finish out the month. Outflow winds hit the Spokane Airport in the evening on the 30th with a peak wind gust of 47 mph.

October started off on a quiet note except around the Wenatchee area on the 6th where windy conditions were observed. A wind gust of 87 MPH was recorded at the top of Mission Ridge and 44 MPH in Wenatchee. The pattern turned active in the middle of the month. An usually cool and wet period occurred on the 12th and 13th with snow falling in the mountains. Lookout Pass reported a foot of snow. On the 17th a strong cold front brought windy conditions with several downed trees and power lines between Colville and Spokane which closed several roads. Wind gusts include 54 MPH Thornton, 53 MPH Spokane, 52 MPH Pomeroy, 48 MPH Pullman, 46 MPH Sandpoint, and 44 MPH Coeur d'Alene. A mild and wet subtropical moisture fetch hit the region on the 21st and 22nd with Prichard coming in with 2.34 inches of rain with 2.12" in Leavenworth. All this rain fell as snow in the mountains around the Methow Valley with 23" at Washington Pass, and 15 inches at 3300 feet north of Winthrop. Windy conditions occurred as well with a 53 MPH gust at Alpowa Summit and 52 MPH gust in Spangle. On the last day of the month, a push of north winds down the Okanogan Valley brought a peak wind of 41 MPH in Omak.

November turned out to be mild and wet after starting off on a cold note. An early season modified arctic boundary shifting south towards the Washington and Oregon border on the 4th and 5th with several around of light snow. Higher snow totals hit the mountains north and east of Spokane. Two-day totals include 12" Spirit Lake, with 9" in Wallace, Coeur d'Alene, Athol,

and Prichard. All this snow combined with clearing skies led to a cold morning on the 7th with Republic and Deer Park the cold spots at 13F. Late on the 15th and early on the 16th a cold front stalled over the NE WA Mountains. Heavy mountain snow hit 49 degrees North Ski Resort with 14". A very mild system arrives from the 20th through the 22nd as a tropical moisture fetch became aimed at the region. The first initial surge of moisture brought mountain snow with a burst of heavy wet snow closing Interstate 90 over Lookout Pass. The Cascades also saw significant snow near the Cascade crest with 7" in Mazama. The Cascades continued to get pounded with significant precipitation the following days. On the 21st a wintry mix hit the Cascades with freezing rain over Loup Loup Pass with a mix of snow, sleet, freezing rain, and rain in the Methow Valley. Yet more precipitation on the 22nd and 23rd was enough to push the Stehekin River above flood stage. Holden Village, located in the mountains above Lucerne near Lake Chelan over a 5 day period recorded 6.14 inches of precipitation. This combined with snow melt contributed to a mud flow above the village, which then flowed down main street and left 4 to 6 inches of mud covering the road.

December started off on a quiet note as strong high pressure dominated the first half of the month. Low clouds and fog became prevalent in the valleys and Columbia Basin with areas of freezing drizzle created slick roads on the 9th and 12th. The pattern changed on the 15th as a trough dropped down into the region. For most places only light snow fell but a different story for the Spokane area and Palouse where a band of heavier snow set up with 8" in Rosalia and 7" at the Spokane Airport. After this a couple very wet systems moved into the region starting on the 19th. Heavy snow fell north of Spokane with 13" in Sagle, Bonners Ferry, and Diamond Lake. Spokane saw 1 to 3 inches of snow which changed to rain, but the remarkable item was the 1.12" of precipitation that fell that day making it the 4th wettest December day on record. Near the Cascade crest Holden Village measured two feet of snow. The other remarkable wet system occurred on the 28th and 29th as a subtropical moisture fetch interacted with a stalled arctic boundary near I-90. The Idaho Panhandle was hard hit with the town of Clark Fork, Idaho east of Sandpoint coming in with 35". Other reports include 17" in Prichard, 16" Bonners Ferry, 12" Deary and Wallace, and 10" Priest Lake. The Cascades also reported impressive snow totals including 28" Stehekin, 18" Plain, 14" Mazama, and 12" in Leavenworth. In addition to the snow, a band of freezing rain set up over the Spokane/Coeur d'Alene area north towards Deer Park and Priest River. A half inch of ice was reported in Coeur d'Alene and Clayton with 1" of ice in Rathdrum with reported tree damage. The heavy wet snow and ice led to several power outages. Further south heavy rain on the Palouse with two day rain totals including 2.73" Palouse, 2.35" Moscow, 2.24" Pullman and 2.18" Thornton. This heavy rain combined with melting snow was enough to push Paradise Creek in Moscow above flood stage with minor flooding.

Site: Wenatchee, WA (Water Plant)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Average High Temp	27.4	35.9	50.9	60.5	73.3	79.9	92.4	91.3	78.2	62.0	46.1	34.5	61.0
Dep from Normal	-8.5	-7.5	-4.2	-3.7	+0.3	+0.1	+4.2	+3.7	-0.1	-1.5	-0.4	-0.3	-1.5

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Average Low Temp	18.2	22.2	32.9	40.3	48.9	56.5	63.3	63.5	53.5	39.2	33.4	26.6	41.5
Dep from Normal	-7.2	-5.5	-1.4	-0.4	+0.1	+0.9	+1.8	+3.0	+1.8	-2.0	+1.2	+1.4	-0.5

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Precipitation	1.84	1.71	1.46	1.69	0.80	0.10	0.00	0.03	0.01	1.32	1.56	1.47	11.99
Dep from Normal	+5.51	+7.71	+8.85	+1.16	+1.11	-5.56	-3.34	-1.16	-2.29	+8.80	+1.18	-0.06	+2.91

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Snowfall	9.5	14.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	3.5	31.8
Dep from Normal	+5.5	+11.3	+2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+0.5	-3.2	+16.1

Site: Lewiston, ID

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Average High Temp	31.5	44.3	54.0	59.8	72.1	81.4	95.3	93.2	78.7	61.7	50.4	36.1	63.2
Dep from Normal	-10.1	-2.2	-0.9	-2.5	+1.2	+2.9	+6.0	+4.4	+0.5	-0.9	+2.2	-3.4	-0.2

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Average Low Temp	20.8	29.9	37.2	41.0	47.1	54.9	62.4	61.4	53.8	41.0	35.4	26.1	42.6
Dep from Normal	-8.8	-1.0	+1.6	+0.7	+0.1	+1.5	+2.8	+2.2	+2.8	-0.1	+1.3	-1.9	+0.1

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Precipitation	0.81	1.97	3.50	1.98	1.49	0.62	0.01	0.02	0.56	1.17	1.76	2.63	16.52
Dep from Normal	-.27	+1.21	+2.35	+6.66	-.12	-.62	-.65	-.67	-.11	+2.21	+5.58	+1.66	+4.21

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Snowfall	6.7	8.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Tr	13.0	32.5
Dep from Normal	+4.3	+5.9	+4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.8	+9.5	+22.0

Site: Spokane, WA

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Average High Temp	27.0	36.0	47.5	55.0	68.0	77.8	88.5	87.8	73.2	56.2	43.5	31.1	57.6
Dep from Normal	-7.4	-3.6	-1.4	-2.2	+1.6	+4.0	+5.2	+4.9	+0.3	-1.8	+1.9	-1.1	0.0

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Average Low Temp	13.4	22.5	34.1	37.5	46.1	53.0	60.5	59.7	51.1	37.0	31.9	22.3	39.1
Dep from Normal	-11.3	-3.9	+2.5	+0.7	+2.3	+2.6	+4.2	+3.9	+3.7	-0.2	+2.1	-0.2	+0.5

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Precipitation	1.85	4.39	4.11	1.60	1.31	0.71	Tr	Tr	1.21	1.40	2.88	2.88	22.34
Dep from Normal	+0.06	+3.06	+2.50	+0.32	-0.29	-0.54	-0.64	-0.59	+0.54	+0.22	+0.58	+0.58	+5.78

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Snowfall	13.5	19.8	5.4	0.5	0.0	0.0	0.0	0.0	0.0	Tr	7.2	17.1	63.5
Dep from Normal	+2.1	+13.0	+1.9	-0.5	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.2	+2.5	+18.6